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DISQUISITION

OF THE

STONE *and* GRAVEL.



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DISCUSSION

OF THE

STONE AND GRAVEL.





A  
DISQUISITION  
OF THE  
STONE *and* GRAVEL,

AND OTHER DISEASES OF THE  
BLADDER, KIDNEYS, &c.

THE

Occult Causes of the STONE assign'd, its Principles explain'd; with the manner of its Accumulation; and by what means a Nucleus is first form'd, which generates the STONE; with the most rational Method of Cure.

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By Wm. ADAMS, SURGEON, *London.*

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*Plus vident Oculi quam Oculus.*

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THE FOURTH EDITION.

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L O N D O N :

Printed for P. SHATWELL, Bookseller, opposite the *Adelphi*, in the *Strand*; C. NICOLL, *St. Paul's*; H. PARKER, No. 82, *Cornhill*; and J. SOUTHERN, in *St. James's-street*.

(Price Two Shillings.)

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## P R E F A C E.

**T**HERE is not in the whole practice of Physic a matter of more importance than the subject of the following Essay.

From the first of my attention to diseases in general, and their cure, I was particularly inclin'd to consider the causes hitherto assign'd of the Stone, and to endeavour further to investigate them; and from that employ a part of my time to discover if possible a solvent which might be properly considered a specific in its operation, as the disorder is of the local kind. My motive proceeded as well for the honour of the Profession, and the desire of seeing it further improv'd, as from sympathy of feeling for the distresses of my fellow-creatures: for how often do we see those who in other respects possess a sound constitution, when the digestive

and mental faculties are very good, and yet are incapable of walking across the room without great pain and torture, and are excluded from the enjoyment of corporal exercise of any kind whatever: and tho' the Stone of itself does not suddenly kill the patient, yet, by his inactive sedentary life, the juices of the body become vitiated in time, and the food he takes for nourishment not being properly assimilated the foundation of other diseases is laid, and he dies by a complication of miseries.

I had this further satisfaction in view in publishing this treatise, of evincing the necessity of attending to the disease in its first state, hoping by that to prevent many from its dreadful influence, being fully convinc'd that, in its commencement, it is as easily cur'd as any chronic disease. 'Tis fortunate for us that the indications of a beginning Stone are such as cannot easily be mistaken for another complaint, the kidneys being generally the primary seat of the attack.

One reason to be assign'd of medical writers being silent on this subject is, that the disease has long been pronounc'd the *Opprobrium Medicorum*,



*corum*, and that the only reliance to be made of a radical cure is on the operation. Upon which doctrine I shall beg leave to observe, that it often happens after the incision into the bladder is made, that in extracting the Stone a part is separated by the forceps, or perhaps several of different sizes existed in it before. Now, as there is very little time allow'd for searching after them, the success depending upon the dexterity of the artist, a part is left in the bladder, and in a short time begins a new concretion, and renders him liable to the same disease in its aggravated state; for there seldom fails to ensue an uneasiness in the part itself, from the contraction occasion'd by the cicatrix of the wound, even if the Stone has been wholly extirpated.

The above misfortune I have known befall several persons who had been cut, and who had form'd a resolution afterwards of suffering by the gradual force of the disease, rather than suddenly endanger their lives, when the success if they surviv'd was so uncertain in the end.

Indeed, it's reasonable to suppose, that if we can remove the disease by a medicine which destroys the cause of the complaint, the cure must  
be

be more permanent than when the effects only are taken away, (*Sublata causa tollitur effectus*); notwithstanding all which, Lithotomy is brought to its greatest perfection, and can never be perform'd with less danger by any future operators. Since the improvement of which, the physical world have totally neglected to search after a medicinal cure, being also deterr'd from it by the arduousness of the task: yet considering the future advantage of such an acquisition to the healing art, at the same time reflecting on the numbers that die of the stone, who are improper objects for undergoing the operation, and that the season of the year, age and constitution of the patient, must all conspire to render it successfull, there was still inducement enough to employ one's-self in such pursuit. It was requisite such a remedy should be possess'd of peculiar properties for disuniting and destroying the adhesion and texture of hard and solid Stones, and be divested of its acrimony, which would render it offensive to the stomach and intestines, and have the peculiarity also of acting with force when arriv'd at the bladder, and mixt with the ammoniacal salts contain'd in the urine: and that there are medicines that act as it were specifically and electively, is prov'd in the effects  
of

of mercury, cantharides, and many others, and will be further prov'd by the experiments introduced in the following work.

It may by the faculty be alledg'd against me as a fault, that I do not at once disclose the preparation of the solvent I recommend as a cure of the Stone, maintaining it a piece of empiricism in any one to with-hold a discovery in medicine from the rest of the profession. To which I answer, that they shall be supplied at as small a price as they could prepare it themselves, if posselt of the recipe; and for the public in general, they have it at little more than fourpence a dose: but it cannot be thought unreasonable that I should repay myself for the very great expence and trouble I have been at in fitting up an elaboratory, and utensils for its preparation.

Indeed I scarce know any apothecary who has not his favourite nostrum for some complaint or other. It should also be observ'd, that the title of an empiric should be apply'd only to such persons as have been brought up to other business, and that pretend to do what is often impossible to be done; whereas it can appear I have been in the practice of Physic, Surgery, &c. these sixteen



teen years, and have certificates from hospitals in England, &c. whose courses of lectures I have regularly attended.

It's unnecessary to say more, but that no one has a greater veneration and respect for the Profession than I have, or would take greater pains to rescue it from the hands of pretenders and ignoramus's, who daily encrease and endeavour to get ground to the dishonour of it, and disgrace of regular practice.

I am,

with much respect,

the Public's most devoted

Humble Servant

The AUTHOR.





**B**EFORE I treat of the Stone and its concomitant symptoms, it will not be thought by some of my Readers improper to give a short anatomical description of the parts most nearly concern'd in that disease. And first,

*Of the K I D N E Y S.*

A human body contains two kidneys, both plac'd in the abdomen, or lower belly; the right is seated under a part of the liver, the left nearly between the spleen and musculus lumbaris, both under the mesentery or duplicature of the peritoneum.

In man, the right kidney is somewhat lower than the left; but in quadrupeds, the left is generally so.

They have each two membranes, the exterior of which joins them to the loins and diaphragm, and are fastened to the bladder by the ureters; they are of a glandulous substance, interspersed with an infinite number of small pipes or canals, and in figure much resemble a bean, from whence the name *Kidney Bean*.

B

They

They receive their blood-vessels from the vena cava and aorta, by the emulgent arteries, whose numberless ramifications extend thro' the whole substance of the kidneys, and terminate in glands of a globular form, which compose the cortical part of the kidney, of about half an inch thick, and of a liver colour.

From each of these glands issue out the tubuli belliniani, which extend themselves toward the pelvis, or internal cavity of the kidneys, and form the papillæ, adjoining to which, is the canal call'd fistula membranacea, thro' which the urine is convey'd, that it might be discharg'd by the ureters into the bladder.

The blood remaining after the secretion of urine is remitted to the heart, by the minute capillary veins which arise from the extremities of the arterial branches, being inclos'd in the same capsular with the artery, that terminates at the cava.

There are likewise a multiplicity of muscular fibres in the structure of the kidneys, which demonstrate that they are of other uses than that of secreting the urine; as also for the ejection or expulsion of any concremented substance that should be lodg'd therein.

*Of the U R E T E R S.*

There are also two ureters which pierce the substance of the kidneys, and convey the urine from their cavity into the bladder; they are generally of the size of a goose-quill, are membranous and fistulous, and of unequal diameter, and tho' they are capable of great dilatation, yet obstructions of them are of infinite consequence to the patient, occasioning a suppression of urine, and if either is afflicted, a strangury will ensue:

*Of the BLADDER, or VESICA URINARIA.*

The bladder is compos'd of three membranes, the exterior common from the peritonæum, the other two proper to themselves; the middle one is made up of carnous fibres, longitudinal and circular; by the action of the longitudinal the fund of the bladder is press'd forward towards the os pubis; from whose lower part they arise, as well as from the fore part of the prostaticæ, while the circular ones, by lessening its dimensions, excite and procure the discharge of urine.

The inward membrane is nervous, and of an exquisite feeling; hence is accounted for the violence of the inflammation when the urine is become acrimonious, by being too long retain'd, as it's prov'd to be the most putrescent of all known liquors.



The bladder would be subject to many more accidents, was it not defended on all sides with a vast number of glands; and which, by continually emitting a mucus, serves to blunt the urine of its salt: when this natural mucus is deficient, a disease of another nature is produc'd, and can be remedied only by balsams and mucilages taken freely off to supply the want of it.

It is a kind of reservoir, which receives the urine of the kidneys, that it might not be evacuated continually, and against our consent; as I once observ'd in a boy that had no bladder, and us'd to go begging among the Faculty, submitting himself to their inspection.

For the more easy emission of the urine, nature has furnish'd it with a sufficient excretory duct, which is the urethra, and being tender, like the inward membrane of the bladder, has lin'd it in the same manner with glands, which emit a slimy mucus that defends also the passage from being excoriated by the urine and other dangers it might else be expos'd to.

Both the bladder and urethra derive their veins and arteries from the epigastrics and illiac nerves, and from the pelvis of the abdomen, and by communication or sympathy are often equally affected in an acute inflammatory disease.

And



And as from the unnatural temperature or ill condition of the urine, proceed the various diseases of inflammation, stones, gravel, and all fabulous concretions; I shall lightly run thro' its constituent principles, that its nature may be better understood by those who are not conversant in these things.

*Of the U R I N E.*

That the urine is an elementary fluid, is evidently demonstrated by the frequent experiments of our chymists upon it, from whence they extract an insipid lymph, volatile spirit, an acid saline matter, some oil, and a fix'd salt, which yields the earthy Sediment, perceiv'd after it has stood some little time in the urinal.

Indeed whoever has a turn for natural philosophy may perceive that without the help of chymistry, since its principles are contain'd in those mixtures which serve for our aliment, and participate also of the four elements; and the more one of these is predominant in the aliments we take most freely of, the more is the urine impregnated with its principles—and clearly evinces the necessity of a proper regimen, being laid down in the cure of the stone, or other complaints of that kind.

There is a singular property in the urine that many medicines effect it before the stomach, which receives it, or indeed may be properly said,

said, without any effect at all in the stomach, intestines, or blood itself, from which it is secreted.

We find a blister will induce a dysury and inflammation of the neck of the bladder, by rendering the urine acrid with its salt, when perhaps no other part feels any inconvenience—the smell of paint, from the turpentine in it, will produce the like in a milder degree, and gives the urine, when first made, the fragrance of violets; all these but little affect the blood or its circulation, except the pain becoming a stimulus: on the contrary, mercury, which so suddenly and infallibly heightens the momentum of the blood, and quickens the circulation of the juices, is not in the least observ'd in the urine, whether in taste, smell, or colour: which reflection, gave me no small hopes of succeeding in my wishes for discovering a solvent whose operation should be specifically confin'd to the urine only, acting either by disuniting its earth and saline parts, and volatilizing its salt, or by preventing the urine from partaking of those qualities, destroy the adhesion, and cause the stone to fall into a white friable powder, unless it's of the grape kind, in which case it is discharged by little red pieces of a globular figure. Almost all human calculi, when depriv'd of their fix'd air, grow of a paler colour, and become chalky and crumbly.

*of*

*Of the GRAVEL.*

The Gravel being the predisposing and most common Cause of the Stone itself, particular regard should be had to its indicating Symptoms, not only to be certain when it is present, but also to be directed in the method of cure, as while it is in this infant state, it is easily assailable, and may be expell'd the body with a few doses of mild medicines, prescrib'd according to its seat, &c. as in the Kidneys or Bladder.

When we have consider'd the nature of the Fluids of the human body, particularly the Urine, as also that their circulations and progressive motions may be retarded by various means and accidents: no wonder that the latter will deposit in the part where it rests a gravelly sediment which it never fails to do when out of the body. Heat also being generated and maintained by agitation and continued motion; it's evident that when they are impeded, the fluids will grow cooler, and be more liable to let fall their earthy part, for cold is as productive of the Gravel as an improper choice of liquors; we find it affect different constitutions various ways, and even the same constitution at different times, it contracts the pores on the surface of the body, and checks perspiration, and all the other secretions and excretions, by which means the fluids become more acrimonious, and produce  
either



either Fever, Diarrhea, Gravel, &c. according as the matter is thrown into the Blood, Intestines or Kidneys.

Laxity and debility of those parts concern'd in the secretion of the Urine will also be another cause of the Gravel, for the Kidneys as well as the Bladder by their variety of muscular fibres are subject to contraction and distension; if therefore its muscular action is enfeebled, they are less capable of dislodging and ejecting any concretions thrown in them, but suffering it to remain; it encreases by its well-known property of attraction and affinity, 'till its irritation produces a fit as 'tis call'd, and if the Gravel is too large to be expell'd by the Ureters; the case if neglected is dreadful, as no operation can be perform'd on those organs; but the whole internal cavity is liable to be block'd up, as is sometimes the case, and was discover'd in a subject who died some time ago, and as he had been miserably afflicted without any sign of the Stone in the Bladder, (having been sounded repeatedly;) it was advis'd after his death to open him, when the whole internal part of the right Kidney was fill'd with a flinty Stone, which when taken out resembled a tree with the branches severr'd a little distance from the trunk; he had never felt any acute pain in the part, 'till the Urine became obstructed in its passage, of which he died. He was sometimes a full hour and half in making water.



*Of the Symptoms of the GRAVEL.*

The symptoms of the gravel are various, according to the degree of violence of the disorder itself; but the most common are a dull obtuse pain in the kidneys, or in that part of the loins where they are attach'd; a frequent inclination to make water, from the stimulus of the gravel, sometimes the pain is very acute, accompanied with bloody water, which if retain'd any time in the bladder, becomes of a darker colour; a nausea and vomiting will likewise be excited by the gravel, and frequently a total suppression of urine from spasms induc'd by the irritation of the particles of gravel in the kidneys; the pain will extend itself along the ureters to the bladder, in which case an uneasiness is felt in the side, particularly after a full meal, or much exercise, or on any distortion of the body, riding on horseback, &c. The kidneys, as well as all other organical parts, are subject to inflammation, resolution, and suppuration, which last is not incurable, but may be remedied by balsams that deterge and dispose to heal the parts when the matter is discharg'd. Balsam of capivi, turpentine, &c. are of service here, as also drinking freely of diluting mucilaginous drinks, as barley-water, marshmallow tea, and others.

The same complaints, with a little variation, will affect a person when the gravel is in the  
C bladder,

bladder, and it will sometimes be generated in the latter when the kidneys are quite free from it, except by a sympathy of parts, in which case the pain in the back is not so violent, but the inclination to make water is sometimes frequent, and in small quantities; at other times a strangury is the consequence of the stimulus of the earthy particles against the sides of the bladder, which from the fineness and number of its nervous branches it is liable to.

To prognosticate with certainty in the gravel, strict regard should be had to the urine itself, for when it has stood some time without agitation, the calcarious matter will be deposited in the urinal, particularly if made after the abatement of the pain.

There is a species of rheumatism, call'd *Lumbago*, from its affecting the region of the loins, and which has been frequently mistaken for a nephritic complaint; but the former may be distinguish'd from it in this, that the patient has no uneasiness in making water, but may induce it by bending his body forwards, as in that case the muscles are put on the stretch; on the contrary, if it be the gravel, his pain will neither be encreas'd or diminish'd by it.

'Tis necessary to be particularly attentive to the cure of the gravel, and all other calculous obstructions of the kidneys and urinary passages, as  
from

from them is induc'd the most distressing of all chronic maladies.

The cure of the gravel is of a two-fold nature; the first and most simple is that of relaxing the vessels, and encreasing their diameters, that the repeated efforts of nature may dislodge the concretions. The second is by abrading, corroding, and lessening the calculous matter, and procuring a discharge of it by such medicines as stimulate and excite to action the vessels that retain it.

The first intention of cure consists in copious bleeding, laxative purges, and oily medicines; but above all, repeated warm bathing; which last, tho' not of itself sufficient to effect a cure, or to be us'd without previous preparation, is still a great auxiliary, for it encreases the action and circulation of the fluids, and abates the rigidity and tension of the solids, by which means the obstructing matter is propell'd into the ureters, and from thence to the bladder, where it frequently is evacuated with the urine: these are the most natural means of obtaining relief when the vessels themselves are in their natural state, and the gravelly matter is not encreas'd to such a size as distends the containing part, and becomes too large to be expell'd, without rupturing or otherwise endangering the vessels as it passes along; a piece of calculus, nearly the shape of a barley-corn, will sometimes be pass'd length-ways into one of the ureters, and there changing its position,



position, will by its rough angular corners bring on such an hemorrhage of blood, as has kill'd the patient; which case has, I doubt, not been observ'd by many. It occur'd to a patient of mine some time ago, and to whom I was call'd three hours before he died; he had never complain'd much of the gravel or stone, and as he was at this time incapable of answering any questions ask'd, (the loss of blood having thrown him into a delirium) it was request'd, when dead, he might be open'd, when a piece of stone about six grains in weight, had lacerated the inside of the left ureter, and brought on the discharge of blood which occasion'd his death; for when it had insinuated itself into the ureter, it became a stimulus, and induc'd such convulsive twitches and contractions in the part as encreas'd the first cause.

It therefore behoves every person who has the slightest complaint of the gravel, to have recourse to those curative means, which at this time of the disease are infallible; if it is not then attended to, it is a hundred to one but it accumulates to a stone; for if it is confin'd, the fleshy part readily gives way to a body of a nature so much harder than itself, and permits it to augment. In such a case as this, stimulating medicines will but encrease the disaster, as it is already too large to be expell'd, it therefore must by dissolving medicines be reduc'd to the size of the excretory tube before it can be discharg'd.

Stimulating

Stimulating diuretics are nevertheless very serviceable in the most simple state of the gravel, when the bladder by its laxity and inertness has suffer'd the urine to separate and deposite its earthy part therein. The common diuretics of the shops, and such as have been most frequently us'd in the gravel, are the spiritus nitri dulcis, soap, lime-water, and all turpentine preparations. A physical examination of their nephritic qualities, and how far they may be depended upon in the cure of the gravel and calculous obstructions, shall be given in a subsequent chapter.



O F T H E  
S T O N E.

THE Stone, called in Latin, *Calculus*, from its resemblance of stones of the earth, is found by a chymical analysis, or decomposition, to consist as well as urine, of an earth, air, oil, and volatile salt, and that such substances are capable of forming bodies of the hardest texture, by attraction or adhesion, is clearly prov'd in the making of glass, which is a combination of earth, or sand and salt, with fix'd air, which is prov'd to be the cement of the stone; they are of very different degrees of density and cohesion, some being so loose and friable as to crumble to pieces between the fingers, while others have been taken from the body of such a compact and flinty nature, as to have struck fire in collision with steel, from which consideration, the violence of the symptoms of the stone must be various, some yielding to a few doses of a gentle lithontriptic, when in others it is necessary to  
continue



continue a stronger medicine for a length of time to dissolve and expell it.

But certain it is, that a stone cannot be form'd without a nucleus, which is the substance that generates it, and may be produced various ways; for instance, in St. Thomas's hospital, a piece of bougie by accident slipt in, and was left in the bladder, and generated a stone: In Guy's a bit of a leaden probe did the same; a drop of blood will be productive of it; from which it is plain the disease may arise from extravasated blood, or from an erosion by the acrimony of the urine itself, or the operation of cantharides and other violent stimulants of that nature; a collection of faburrous gravel will concrete and form a nucleus, and so become a stone, which if neglected, never fails to accumulate even to a prodigious size, there having been cut out of the bladder some so large as to measure eleven inches round, and weigh seventeen ounces or more; and in the hospital de la Charité is a stone, which weigh'd when first extracted fifty-one ounces, but they become considerably lighter when expos'd to the open air.

The surface of some are almost smooth, and generally grow to the largest size, others are very rough and composed of angular points, almost as sharp as needles, which accounts for the violence of the pain after making water, occasion'd by the bladder when empty, contracting round it, and very often to such a degree as to wound the tender

der fibrillæ of the nerves, and cause a delirium, discharge of blood, &c.

The causes of the stone may also be irregularities in the non-naturals, or from drinking too freely of unfermented liquors; as new beer, and some of the sweet and raw wines; eating too much of unripe fruits of an earthy taste. There are likewise some kinds of food that are supposed to generate the stone, as eels and lampreys that feed in the mud, also water-fowls. But the most common cause of all, is a retention of acrimonious urine, by inducing obstructions in the passage, or a constriction of the sphincter of the bladder, or the bladder itself not being sufficiently empty'd before a repeated secretion ensues, by which a faburrous matter adheres to some part of it, and by a continued accumulation becomes a stone.

The ancients talk of a *fuccus lapidificus*, which I look upon as merely fabulous; tho' I do not deny but that in some cases, the disease may be hereditary, and deriv'd from either parent, as we find infants severely tortured with this disease, who have only fed on milk and such like diet, that in itself has no tendency to produce the stone.

It will be needless to dwell longer on the causes of the stone, as this is intended more to serve the patient than instruct the artist; I shall therefore defer

defer writing largely on the subject, till a more fit opportunity.

*The SYMPTOMS of the STONE.*

FROM what has been said upon the subject, it's plain the symptoms of the stone must be various; as in some only a sense of weight in the bladder is felt, with a dull obtuse pain, and now and then obstructions in making water, while in others it is violent and intense, exciting great thirst, fever, nausea, and vomiting, sometimes a total suppression of urine, and at other times ting'd with blood; sometimes a delirium and constant watching, all which can only be palliated at that time, as they are entirely symptomatic.

It is easy to judge whether the patient has the stone or not, by observing the preceding and following symptoms, some or all of which are constantly attendant on it; as sometimes frequent inclination to make water, by the stone stimulating the sphincter of the bladder: If the stone is large, it may likewise be observ'd to move upon hastily turning when in bed, from side to side.

A symptom not less frequent than any, is an itching or uncommon titillation on the glans penis, or nut of the yard. But the most invariable symptom of all, is an acute pain in the bladder,

D

generally



generally near the neck, after having made water; by its contracting round the stone as was mention'd before: The degree of pain is in proportion to its size, roughness of its outside, and other circumstances of the like nature.

The symptoms are so very peculiar and intelligible, that it's hardly to be mistaken for the cholic, which is the only disease it approaches. But if after all the patient should want to be confirm'd in his opinion, he may apply to an expert surgeon, who by introducing a catheter or sound, will instantly satisfy him, if it is of size sufficient to make the least sensible resistance.

The fit of the stone may with propriety be compar'd in a measure to the symptoms of an intermittent fever, as a feverish heat always prevails, the complaints are heighten'd during the fit; and the pain succeeding the making of water is never so great as while the fit lasts.

Some persons in the stone, even when it is large, feel but little pain or never at all when the fit is absent, but can judge of its approach by a rumbling of the intestines, pain, and sometimes sickness at the stomach, frequent inclinations to make water, and various other indications. Tho' it is not truly periodical, 'tis certainly an intermittent disease, as we observe patients often enjoy great ease during the paroxysm, and yet the cause remains as before; which clearly evinces there  
must

must be a certain disposition of the body to bring on the fit, and as it is of the inflammatory kind, being in fact induc'd, as all other simple inflammatory fevers are, by a stimulus, antiphlogistics and laxitives may be given, such as small quantities of barley-water with a little gum Arabic and nitre, by way of cooling and blunting the ardor of urine; also a laxative draught, compos'd of manna and oil, with about a dram of tartarum solubile. Venæ section to the quantity of eight or ten ounces of blood or more, if of a sanguine habit; and tho' these means are not to be rely'd upon as curative, yet they greatly tend to shorten the fit, and procure a temporary ease.

*Of the REGIMEN proper in the STONE or GRAVEL.*

WHEN a patient finds himself afflicted with the stone, or a disposition to it by a gravelly sediment in his urine, a pain in making water, or in the kidneys, &c. he should immediately change his diet for that of the most light and nourishing, at the same time eating moderate suppers, which should be panada, rice-milk, or such like food; as, if the stomach is surcharg'd by eating too freely, digestion is imperfectly carried on, whence flatulencies, want of sleep, &c. are produc'd, and the disease heighten'd by the urine becoming crude and ill prepar'd.

His drink should be of a well fermented generous nature, as old mountain, or port and water, weak rum and water, with now and then a draught of barley-water, or something bordering on the saponaceous kind, moderate diuretics do great service in the gravel, or beginning of the stone, by exciting the bladder to frequent emissions of urine, by which it is prevented from depositing that earthy matter which it abounds with in this case.

But in the stone in the kidneys, which is too large to pass the ureters, or in the bladder, that cannot be emitted thro' the urethra, such stimulants would do great injury, by forcing it, if small enough, into the passage, and bringing on a total suppression of urine, which if not reliev'd in time by the help of a catheter would endanger the patients life; as in so confirm'd a case no reliance must be made on diuretics, but recourse had to solvent medicines, which will abrade its rough surface, and lessen its dimensions, and by continuing in their use be likely to dissolve it, or destroy its adhesive properties, and by that means break it into pieces, which will lay it more open to its dissolvent power, in proportion to the number of surfaces.

If it is brought on by a too free use of sweet ill fermented ale, or any other malt-liquor, the use of it must be forbid, changing it for some of those drinks before mention'd, and at intervals,  
between



between-meals, a draught of barley-water, or treacle beer, should be drank every day, as it is a means of keeping the urine from acquiring too saline a quality, and thereby preventing much pain and promptitude to urine by small quantities. In every stage of this disease it is advisable to keep the urine moderately diluted of its salt, as by that means the growth of the stone is retarded. It is requisite that three quarts of fluid should be drank in the twenty-four hours (including that at meal-times) to keep the urine in a due temperament.

A vegetable diet is not so apt to produce the stone, as some have imagin'd, tho' there is a material difference in the property of different fruits and vegetables, as apples, cherries, and raspberries, with some others, are gentle diuretics, and encrease the secretion of urine; yet dry'd pease, nuts, and barley, are liable to produce viscidities and stony concretions, as we see by those who drink great quantities of strong malt-liquors; whilst celery, horseradish, parsley, &c. are all of the diuretic kind, and are great auxillaries in the cure of the gravel.

In slight gravelly complaints, as I have before observ'd, an abstemious diet, right use of liquors, with a few doses of medicine, will often totally remove it, together with proper gentle exercise, of which the most salutary is riding on horseback, as by that the fluids of the body are gently agitated,

tated, and the inclination to make water often excited, and the efforts of nature assisted ; such a course will almost always succeed.

But in the stone (if large) such means would be highly improper, as in that case the fits would be brought on oft'ner, and the medicine evacuated too soon to act upon it as a solvent.

Seeing the rules as to regimen are essentially different, the causes and method of cure may to some be thought different also ; but daily experience evinces the contrary, as the causes of both for the most part are an imperfect secretion, or fault in the choice of fluids for drink, or an ill formation of parts that filtre or secrete the urine itself, by admitting the grosser parts to pass thro' them, that should be carried off with the excrements ; and as to the method of cure, the difference is not material ; for as it's impossible for a medicine to act as a solvent, without being in a degree diuretic, it must of course be highly proper in the gravel ; only a far less quantity is necessary to be taken.

We do not so much depend upon the choice of solids as fluids for our use ; neither is it possible to lay down a rule for the former ; for tho' I have before observ'd, people in general who are attack'd with the disease, have a languid appetite and digestion, yet I do not deny but that a man of an athletic constitution and strong tone of stomach,  
may

may be liable to it, and in that case his solid food should be proportion'd to such strength of stomach.

It would be the height of error and absurdity to feed the robust plowman with boil'd chickens and other delicious viands, or the man of a fluidious sedentary life, with hang'd beef, bacon, &c. Such persons, and who perhaps have been valetudinarians all their life time, must have food compatible with their inactive manner of life. Therefore the patient is left to his discretion, to make such choice of food as he has found best agree with his strength of stomach.

In case of febrile heats accompanying the other symptoms of the stone or gravel, currant-jelly, diluted with warm water, is an agreeable and serviceable liquor; or in its stead pippin-water, with sugar; clear cyder and perry are also to be recommended in these cases.

It is observable that in those countries where these last liquors are drank in common, the inhabitants are less troubled with such complaints than in others where ale is made the common drink; and in this there is a very considerable difference, which principally depends upon the fermenting it, and the time it is suffer'd to stand to deposit its fæculencies and grow fine: therefore those ales which are transported from one place to another, are oblig'd to be fine and have strength



strength in proportion, or they would not keep. Such is the nature of those country-brew'd ales we drink in London, as Burton, Dorchester, Ringwood, and others; but the new ale we are supplied with by the London brewers, is treated differently from any of them, and is drank in its crude sweet taste, very unwholesome, and in this case pernicious. From the choice of proper liquors pointed out to the patient, as before, he need not be at a loss to know which to take of.

In the case of great and unquenchable thirst, nothing can be preferable to barley or pippin-water; but as a liquor to drink with meals, I would (if they can be had) recommend cyder, perry, capillaire, and water, or weak wine and water; or where malt-liquor is much desir'd, one of the former ales diluted with water to the strength of small beer, will not be found injurious, if taken of with moderation.

Bleeding is often requir'd, where the patient is plethoric, and attack'd with the disease during his living; the quantity of blood to be taken, must be proportion'd to his strength. A person of sanguine constitution, susceptible of inflammation or inflammatory complaints, may well admit of twelve or sixteen ounces, and repeated as occasion requires; it is likewise necessary during the cure to keep the body in due order, neither too lax or too costive, as either extreme is unfavourable.

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The warm bath is sometimes of singular service in suppression of urine, and when gravelly complaints run high, by universally relaxing and carrying off the spasms; as also a partial bath, immersing the penis and scrotum in warm water will frequently succeed, and may be made use of when the warm bath cannot; they relieve the patient for the present, and by that means give the medicine time to make a radical cure.

Women in general are less troubled, and sooner cur'd of these complaints than men, from the more favourable structure of the parts affected with them; as stones are frequently evacuated from them with the urine, of a large size, and often with but moderate pain.

The symptoms in both are also very simular, and require exactly the same treatment. Indeed women are not near so liable to suppressions of urine, and when that does happen, it is easily relieved in them by the catheter.

It has been observ'd that the French are much more subject to the stone than the English, from the numbers that are cut for it in the hospitals of Paris, owing, as is said, to a concreting quality in the water of the Seine; add to that, the Surgeons there are reputed more dext'rous and successful in the operation of lithotomy than elsewhere, which induces people to undergo it more  
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willingly, and at the same time they neglect making use of any medicine as a remedy in such cases.

*Of the more immediate Cause and Cure of the STONE.*

There has never been given hitherto by authors any satisfactory account either of the causes or cure of this concreting disposition in the fluids, tho' it has been generally imputed to a particular diet and climate, which now cannot reasonably be allow'd, since we see that in every country, and amongst people of all ranks, as well in the sober and abstemious as the luxurious, the stone is a frequent disease; at the same time, if we take a survey of the numbers that are cut for it in the hospitals of Paris and London, we shall find that the greater part are children; and I greatly suspect that many die of this disorder when convulsions have been brought on by the stone irritating the tender lining of the bladder: the urgency in them to make water is very frequent, but the posture they do it in, viz. lying on the back, is more favourable to the emission of urine, and consequently leaves less room to suspect such disease; for as soon as the bladder has nearly empty'd itself, the stone falls to the brim or wider part of the bladder, and leaves it to contract without that pain which grown persons endure on its touching the sides of the stone.

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Tho' this disease may be brought on by some one or a conjunction of those causes I have assign'd in the gravel, (that being in fact the same disorder in a different degree) yet the more common and immediate one is in the vessels themselves; for I cannot but suppose there is the concreting disposition in the urine of every person: from every experiment made on stones of the bladder and kidneys, they resemble the tartar of wine; I say, of the stones of the bladder and kidneys, as there are concretions of the other fluids of the body, as the gall-stones, and gouty ones of the blood and lymph, the disposition being consider'd as always present, the accumulation of the animal tartar is begun and encreas'd by the inertness of those vessels concern'd in the secretion of the urine from the blood, and in those of its excretion.

If the urine could grow cold in the bladder, it would always deposit the matter there as it does on the sides of the chamber-pot, tho' the lining of the bladder being cover'd with a mucilage, makes it less fit to attract the earthy particles than the pot itself; we therefore see that abatement of the natural heat of the body, and debility of the urinary organs, are the general causes of the stone; the particular, or rather preternatural ones, are when extraneous bodies are insinuated into the bladder, as a bullet, needle, piece of bougie, &c.

From what is advanc'd, 'tis plain, the most successful method of preventing the stone is keep-

ing up the natural heat of the fluids of the body : when a fever is present, the urine is bright and high colour'd, but on its decline, and the body becoming enfeebled, and cold succeeding it, the urine is thick, and lets fall its earthy part ; the same holds good of every other heterogeneous liquid, as well as the tinctures in the shops extracted either from minerals or vegetables. We know that spirits, aromatics, and high-season'd food, will heat the body ; but as their use may be productive of other disasters, the only plausible prevention is exercise, as being the most natural and salutary ; for besides keeping up that heat so friendly to health, it preserves a due degree of action of the solids on the fluids, and prevents other disorders which a sedentary life is liable to.

From the monstrous increase of some stones in a small time, and the cessation of growth of others for many years, we may be persuaded that the constitution varies exceedingly at different times ; and from appearances of most stones when artfully saw'd through, we may gather, that this variation does not shew itself only in the quantity of gravel added to the stone, but the quality of it also ; so that a red uniform stone of an inch diameter may perhaps at half that size have been a smooth white one, at a quarter a brown mulberry one, and so on, at different times altering in its species ; hence, from the apposition of different colour'd gravel, arises, for the most part, the

the laminated appearance of the stone, tho' sometimes the laminæ are very nearly of the same colour and composition; and in this case their formation seems to be owing to the want of accretion in the stone for a certain time, during which its surface, by rubbing against the bladder, and its attrition from the stream of urine, becomes smooth and compact, so that when more fresh, loose gravel adheres to it, its different density in that part will necessarily make the streaks we see in a section of the stone, which are only the outside surfaces of each lamina.

'Tis no wonder that stones so generally form in the kidneys, since the disposition of the urine will naturally shew itself as soon as it is separated into the pelvis, that is, the stony particles having as strong an endeavour to unite with one another in the kidneys as the bladder, will consequently from meeting first there, generally produce gravel and stone in that part.

The means us'd by physicians, &c. as an attempt to cure this disease before it was rank'd with the *opprobria medicorum*, were as follows: After enjoining a total abstinence from all malt-liquors, the patient was put upon a simple diet, and order'd to be bled copiously and repeatedly, to retard the returns of the fits, together with frequent purges of manna and oils, and made to drink freely of mucilaginous liquors. The inefficacy of the above method made them have recourse



course to medicines that would be likely to dissolve it: Soap being a great dissolver of animal substances, particularly unctuous ones, and the principles of the stone not being at that time investigated, it was look'd upon as the most likely to afford a remedy, and has from that time been given, but with what success, the world may judge from its effects; if any good ever accrued from its use, it must have been from the fix'd salt contain'd in it, the other part being a rancid oil or fat, and which must be extremely injurious to the stomach, by exciting a nausea and loathing of food, as well as blocking up the lacteal vessels with a slimy putrified substance.

Lime-water also has been much extoll'd for its lithontriptic virtue; but from the experiments I have made of it, and from those I have learn'd of others, I never could be prevail'd on to believe it would do much service in the stone; indeed a large quantity of it may be taken without injuring the constitution, which gives it the preference to soap, and that if taken to the quantity of two or three quarts a-day, it may prevent the further accumulation of gravel.

Various lixiviums have from time to time been usher'd into the world as dissolvents of the stone; and whatever merit those lixiviums may have had in dissolving them out of the bladder, they could not safely be given in quantity sufficient to effect that purpose when in the body. Where a sound  
constitution

constitution has withstood its attack on the stomach, and its use has been continued a long time, no material good has arisen from it. I have at this juncture several persons of eminence under my care, who have taken the strongest lixivium for twelve or fourteen years, and are not able to say more, than that they believe it has prevented new concretions of the stone. Many who have taken them only a few weeks, have found the coats of the stomach so injur'd, as to threaten an absolute destruction of the digestive faculty, if not timely omitted.

It is not meant by this, to decry the use of any other medicine, in order to recommend my own; as it's universally allow'd by the faculty that soap has that ill effect. It is also known to all those who have read the account of the plague in London, that all those persons who had much to do with soaps, &c. such as washerwomen, died sooner than others; scarce one escaping: as by the use of the soap the crasis of the blood was destroy'd, and the globules broke down, hence more ready to receive and carry on the putrefaction.

The following simple experiment, and which may be made by any person interested in such enquiries, will demonstrate the obnoxious qualities of soap when administered in large doses, and continued for a length of time as is necessary, if any good is expected from it in such an inveterate disease,

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Let a piece of flesh, such as beef or mutton, (ever so newly kill'd) be immerg'd or suspended by a thread, in a bottle half full of water, in which a small quantity of soap has been dissolv'd, and let the bottle be plac'd in a warm situation, in thirty hours, or if the weather be warm, in much less time, it will emit a putrid stench, and bear all the evident marks of dissolution and putrefaction, an effect not produc'd in a much longer time out of it, tho' in the most putrid disposition of the weather; if the fluid in which the soap is dissolv'd be kept by the thermometer of the heat of the blood of our bodies, the putrefaction takes place much sooner.

Lord Walpole is a singular instance of possessing the resolution of continuing in its use for a long time, having been horridly afflicted with the stone in the bladder: He was taken suddenly ill when at Hampton Court; his case being mistaken at first for the cholic, he was treated by his physicians accordingly; but in a little time a stone was observ'd to pass through the ureters into the bladder, which for the present gave him perfect ease; and some time after by turpentine glysters, and internal lubricating medicines, it was evacuated through the urethra, being about the size of a barley-corn. He was frequently troubled with complaints of the gravel, for which he took cream of tartar whey, and with the use of mucilages kept himself tolerable easy for two years; when being at a friend's house, he had an urgent inclination



inclination to make water, and was greatly surpris'd to find the pot contain'd, instead of urine, a pint of almost clear blood he had made with the greatest pain he had before felt; this convinc'd him of the impropriety of his former regimen, the balsams and mucilages having increas'd the growth of the stone, while they blunted the sharpness of water; he therefore resolv'd to have recourse to the most esteem'd lithontriptics, after being sounded in order to satisfy himself of the size of the stone; and accordingly, in July 1748, he began the use of soap and lime-water, taking an ounce of the former every day, and drank three pints of the latter; in which course he continued to the beginning of the year 1757; so that it appears his lordship took more than one hundred and eighty pounds weight of soap, and twelve hundred gallons of lime-water; a quantity so prodigious as would stagger the faith of any one, if not authenticated by his own hand-writing, as well as that of Doctor Pringle, F. R. S. and related in the Philosophical Transactions. With what degree of success may be learn'd from the sequel of his case, and the state of his bladder when open'd.

It may reasonably be suppos'd that his lordship had other inducements, beside the advice of his phylicians, for persevering in a course attended with such mortifying hardships; and yet, on perusing his case, we find he enjoy'd but little ease, and that all the time he was unable to ride.

in his common carriages, but was oblig'd to travel in a litter made for that purpose, and drawn so slow that he was five days, and often longer, in coming to town from his seat at Woolterton, being only a hundred miles; he also during this length of time debarr'd himself from the common enjoyments of life, making choice of the most simple food and liquors to assist as much as possible the power of the reputed dissolvents.

He died in the beginning of the year 1757, without any particular cause being assign'd by his physicians and apothecary who attended him, both agreeing however in opinion that he did not die merely of the stone. Mr. Ranby and Mr. Hawkins, surgeons, were present at the opening of him, and found in the bladder three stones, two were about the size of a Spanish nut-kernel, the third smaller, and seem'd to be a part broke off from one end of the largest stone; and in a letter from Dr. Pringle to Dr. Whytt, they were describ'd to be smooth, and of a polish as fine and texture as close as a boy's marble; a reasonable proof, in my opinion, of their being but little acted upon by that enormous quantity of soap, &c.

As his lordship had put himself under the most abstemious regimen on the first attack of the disease, and there being two stones with distinct nuclei, there's no doubt but by friction of one against the other, together with the attrition of urine,

urine, that their growth was considerably prevented, and therefore impossible to form any just conjecture of the effect of the medicines upon them in particular; tho' from the state of the bladder and passages, and the smallness of the size of the stones, I suspect he died of a depravity of blood and juices from the putrescent quality of the soap, as he took his dose to the last three days of his life. Lime-water alone, if it does not induce a costiveness, is not deleterious to the constitution, and if judiciously combin'd with certain saline substances, is capable of becoming useful in many disorders.

A many more instances of the inefficacy of soap and soapy lixiviums might be added; but as the case of a nobleman, and in a conspicuous part of life, is apt to make a greater impression upon the minds of the public, it was thought sufficient, especially as the fairest trial of their virtue was made in the foregoing instance, and the disease could not be said to be the most confirm'd, for at all times he was free from pain when in bed or on a couch, the gravity of the stone having never occasion'd much uneasiness.

The medicines of Mrs. Johanna Stevens, the recipe for which the parliament of Great Britain voted her 5000 l. is founded upon the same basis, only more bulky and nauseous, and was prov'd by the learned Dr. Hales to possess little power in dissolving the stone, the only thing contributing



to it being the lime; and that in the form given, never fail'd to occasion and encrease the patient's pain, without bringing any thing away. inſomuch that many people who had taken them for months without benefit, reſolv'd to be cut, rather than undergo the operation of the medicine. Many things ſince have been extoll'd as lithontriptics and diſſolvers of the ſtone, without having any thing to recommend them but their enormous price.

*Of the Cure of the STONE, by a newly diſcover'd  
Remedy or SPECIFIC SOLVENT.*

By the word ſpecific is meant a medicine that operates as it were electively, affecting one part only, or curing one diſeaſe, without acting univerſally on the conſtitution as many others do, ſuch as alteratives and ſudorifics, and will be more fully explain'd in ſome experiments related at the end of the book. Whatever attempts might have been made by ſome to explode the doctrine of ſpecifics, their efforts were too weak for that purpoſe, as we are daily convinc'd and further aſſur'd by the writings of the ingenious Dr. Cook and many others; therefore I ſhall not trouble the reader with a repetition of them here, but proceed to account for the aſtoniſhing ſucceſs this medicine has met with in the world ſince it has been publiſh'd, which is about eighteen months.

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besides the cases annex'd, the proprietor has above a hundred letters by him, from persons of eminence and repute, giving the most flattering account of its success, and the peculiar advantages of its agreeing with the most debilitated constitution, where soap-leses, &c. would be highly injurious.

It is the most absurd and weak to insist upon a thing being impracticable, because it has been aforetime unsuccessfully attempted. A number of discoveries have lately been made in physick, which rather appear'd impossible to be accomplish'd. If a person ages ago had predicted that at such and such times there would be a darkness here and eclipse of the sun, he would have been deem'd a presumptuous impostor, and liable to have been severely treated by the illiterate, if he had first address'd himself to them, without giving astronomical reasons for such seemingly prophetic assertions.

Sir Isaac Newton, and several other natural philosophers, have prov'd the cement of the stone to be a fix'd air throughout its whole substance, and its adhesion is more firm and close in proportion to its acid salt; and that such salt is necessary to its union, is prov'd in the making of mortar, a cement (when perfectly dry) as hard as some stones in the bladder: Now if lime be taken and well wash'd with water so as to dissolve and carry off its saline part, it is no longer fit to make

make mortar, but becomes a friable calx, no more tenacious than sand or earth, and can only be restor'd to its pristine state but by adding sea-salt, or a saline body of that nature, and then it is again applicable to the purposes of building, &c.

Now as we have prov'd the cement of the stone to be fix'd air, which acts upon it only in proportion to its acid salt, it remains to consider what are those medicines which can in the greatest degree absorb such air and dissolve the salt.

All discoveries likely to be useful in physick, must have philosophical reasoning to put them on foot, and the nearer the practice of physick approaches the known laws of mechanics, the more sure is its success and stability; for without such a rational account, we should act in the dark and apply them at random; *Qui forte fortuna curat, forte fortuna necat*, is a proverb of great verity, and should be had in mind when our health is concern'd; for it is certain that where there are no true consistent principles, there can be no rational consistent practice; it must be founded upon some principles or other, either right or wrong:

Alkaline salts have beyond all others been found to absorb air; as a proof of which, let any quantity of fix'd alkaline salt be suspended in an open room in brown paper, or any other porous body, and in a short time it will be found to run  
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into a fluid, by imbibing the circumambient air, which condens'd makes it moist and runs it into that state; an effect not produc'd when suspended in vacuo. And that alkaline salt has a power beyond all others of destroying and neutralizing acids is as certain; for take any quantity, suppose for instance, a quart of the strongest distill'd vinegar, and add to it about twelve drams of a fix'd alkaline salt, more or less in proportion to the acidity of such vinegar, a violent ebullition or internal commotion will ensue, and they will be found, if the proportion was well adjusted, to be perfectly neutralized, or their quality as acid and alkali entirely destroy'd, and so intimately incorporated as never by any chemical process to be again disentangled, as their affinity to each other is greater than any beside; for tho' alkaline salts will mix with unctuous substances, as fat or oil, yet upon adding an acid to the mixture, the alkali will unite with it, and forsake the oil, so as it is restor'd to its former condition, unalter'd; the same takes place with many other menstruums, which are well known to those conversant with the laws of affinity; and that acids contain more air than other fluids is apparent, by the great quantity dislodg'd from it when an alkali is added, and serves greatly to shew the property of the last in expelling it.

I could give a hundred examples more, but that it would be trespassing on the reader's time; neither is it proper to pass over it with entire silence,

silence, as it might with reason be look'd upon as an imposition to obtrude upon the public a medicine under the name of a radical cure for the stone, without accounting, and in a measure convincing the patient it is not presumption that gives it that title.

I have before prov'd an alkaline salt is the only medicine likely in nature to yield the remedy so long sought after, as having the greatest tendency to destroy the principles which cement the stone; but how to qualify and order such a medicine, so as that a quantity might with safety be taken into the body for the purposes of dissolving stones in the bladder, was left to be try'd by chymical experiments, (*hic labor hoc opus*) I flatter myself I have fully attain'd that end; for besides the testimonies hereafter given, I have hundreds in manuscript, of persons that have taken it for a considerable time without in the least inducing a sickness or nausea of the stomach, but on the contrary never failing to recover their appetite and strength, if deficient before; for as the stone and gravel impairs the constitution in general, the appetite is lost, and the patient in consequence grows weak, so that without calling it an astringent stomachic, it by removing the cause allays the effects; one very happy and peculiar advantage resulting from my experiments on the medicine is, that tho' it does not act at all like an alkali on the stomach, yet it preserves and exerts with force its influence when arriv'd at the bladder, which

which may to some appear a paradox, unless reasonably explain'd. Alkaline as well as acid salts, are compos'd of particles like so many needles or swords, which induce great pain like unlevigated calomel when taken in large quantities; which particles in my preparation are envelop'd or wrap'd up in a neutral mucilaginous liquor that sheaths and blunts its points, and renders it so agreeable to the stomach, that infants may take it with the greatest safety, the above mucilage being totally inoffensive, and us'd for no other purpose than as above; and being compos'd of grosser parts than the medicine, is at length disentangled from it and carried out by the common emunctories; 'tis reasonable to suppose that some of the medicine must still be retain'd and carried with it, but the loss is amply made up in the strength the remaining quantity acquires, when united with the ammoniacal salts contain'd in the urine. Sal ammoniac and a fix'd alkali, when triturated together, afford a very volatile salt, tho' separate no volatility is observ'd, and serves to throw a still greater light on the doctrine of specific medicines.

And lastly, as a proof that the urine (contrary to its natural state) participates of an alkali, communicated by the medicine: If a patient under a regular course of it makes water into a glass vessel, wherein is a small quantity of syrup of violets, it will be found to change it greenish; a manifest and determin'd sign of a prevailing alkali,



kali, as that syrup is the standing criterion for distinguishing acids from alkali's, when it cannot by the taste or other means; and that it has not such effect upon the blood is as certain, for by all the experiments possible to be made upon that fluid with that syrup or any other liquor, no such effect can be found, by which I am certain a person might, if requir'd, take the medicine for years without its sensibly affecting any other part than the urinary canals.

It has been alledg'd by most as a reason for not attempting to improve the qualities of medicines of this class, that even if it was effected, the cure of the stone must be tedious and troublesome; but how insufficient such an excuse, when I can most solemnly, nay, even on my oath, assure them that I have cur'd a person of a stone in less time than would be requir'd to heal the wound after the incision, if it was perform'd in an unfavourable season of the year. The above person was founded by a Surgeon of St. Thomas's hospital.

It has been believ'd by all, that there were many medicines that had the power in different degrees of dissolving the stone, if long continued; or at least preventing the urine from resolving into those principles which are found to give rise to the stone, and also of destroying or changing the nature of stones after they were separated from it; but that being incorporated with the chyle in  
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the duodenum, and afterwards with the blood, their power was in part lost: Now, admitting the latter as a plausible dogma, and that it should be allow'd these solvents were enervated before they arriv'd at the bladder; yet if they shall by destroying the petrifying quality of the urine, hinder any new accretions to the calculus, it must necessarily in time have its surface wash'd down and worn away by the urine (now render'd more simple) continually running along it, and the coats of the bladder acting upon it: as we find even the hardest rocks yield to common water.

*Quid magis est saxo durum? quid mollius unda?  
Dura tamen molli saxa cavantur aqua.*

But that the dissolving quality of this solvent is evidently communicated to the urine in a considerable quantity, is prov'd by the following experiments, which may be essay'd by any other person: A piece of human calculus of twenty-two grains weight was put into the urinal of a person under a course of my solvent, and in which he made water twelve days, at the end of which time it was taken out and again weigh'd, and was found to be diminish'd in weight seven grains, there remaining only fifteen grains: A piece of calculus also of eleven grains in weight, being of the same stone from which the former was broken, being urin'd upon by a person under no course of medicine, and not troubled with any gravelly complaint whatever,

increas'd in fourteen days to the weight of fourteen grains, tho' the urine was not apparently charg'd with any earthy particles; which simple experiments, beyond the power of contradiction, prove the solvent to possess considerable efficacy in acting upon the stone in the bladder, especially when assisted by the natural heat of the body; for the remains of the first experiment being put into a phial, and fresh urine of the same person pour'd thereon, and then kept in forty-six degrees of heat by Farenheit's thermometer, was found in five days to be reduc'd to perfect slime and mucilage that fell to pieces in the fingers. If there is room without swelling the size of the book, some experiments will be added made upon the solvent combin'd with some of the animal fluids, as chyle, blood, &c. and which further prove the above assertion.





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O F T H E  
P A S S A G E S.

**I**T frequently happens that excrescences in some part of the urethra or perinæum, by impeding the flow of urine, are taken for a gravelly complaint, especially if attended with considerable pain, which may be occasion'd by the sphincter of the bladder giving passage to the urine fre'er than can be discharg'd by the lessen'd dimension of the cavity of the penis.

It may be remark'd, that if a person during the time he is making water intercepts its exit, by compressing the penis, a violent pain and uneasiness ensues, from the too great dilatation and stretching of the nerves, the most exquisite of feeling

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ing of any part of a human body, and with which this part in particular is well furnish'd.

It is likewise not uncommon for the passage to be contracted from the many cicatrices remaining after the cure of venereal ulcers in those parts, especially if the disease was of a long standing; or if such ulcers were preposterously heal'd by astringent medicines, such as sugar of lead, and others: If a person has had a gonorrhœa or clap a number of times, he rarely escapes them in one part of the passage or neck of the bladder. It is a natural consequence, and may be perceiv'd that the skin of any part of the body is drawn together or contracted, when there has been an ulcer (or *solutio continui*) heal'd there, which makes it obvious, that ulcer upon ulcer must considerably lessen the internal cavity of the urinary passage, and make the stream of water much smaller than its natural state. If the excrescences (which are pieces of fungous flesh resembling warts) hang loose in the passage, they often occasion great pain and obstruction of urine, and cause it when running to be divided in its stream like loose threads, but may be distinguished from the stone or gravel, as in this last case the obstruction in running is only at times, whereas in the other it continues as long as they remain: It also is to be observ'd, that in such obstructions, or when there is a stricture in the passage, the urine is as clear as it naturally is, but in the gravel it has an apparent and often copious sediment in it.

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There is also a complaint diametrically different in effect, proceeding from the same cause, which is a laxity and debility of such parts, induc'd by a too free use of mercurials during the cure, whose well known property is that of universally relaxing.

In such a complaint by the incontinence and sometimes profluvium of urine, with an aching pain after voiding it, the patient has been led to imagine he had the gravel or stone; tho' the frequency in making water does not proceed from any stimulus, but merely a weakness in the contracting muscles of the penis and bladder.

It is not supposed that such complaints can be cur'd by my medicine; it would be the greatest absurdity to expect it, as they originate from a cause remote from the other: The two first of these disorders are only to be cur'd by the proper use of bougies, as I have experienc'd in numberless instances; and the last by the yoke, an instrument to be worn on the part. The bougies for destroying fungous flesh, should be in a slight degree escharotic, and requires great judgment in preparing them; whereas in a stricture of the passage only, they should be quite simple, as they are intended only to dilate and expand, and shews the fallacy of some people who advertise bougies of one quality, that they say will cure all obstructions in the urinary passages whatever; whereas it is plain that the last sort can be of no service  
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in the former case, and [*e contra*] the application of the former would inevitably render the disease incurable.

It is hop'd it will not be thought indelicate by any reader that I have mention'd the above complaints, which, tho' brought on by a cause remote from the stone and gravel, might erroneously be look'd upon as such, by those who have not knowledge enough to distinguish them by their cause; in which case my medicine might be taken to no purpose, but putting the persons to needless expence, and depreciating the character of that, which in other cases is found eminently serviceable.



**I**N whatever light the world may look upon nostrums in general, it affords myself the most singular satisfaction that I have made my labours serviceable to my fellow-creatures in distress, acquitting my conscience of self-interesting views, or obliging the public to pay extravagantly dear for their relief, thereby excluding a part of the community from the benefit of it; which motives have been too prevalent with my predecessors in this particular.

Tho' I flatter myself this discovery will do me much honour and credit, yet it would be vain in me to arrogate to myself the whole merit of it. The accurate experiments of the Chevalier Coetlogon, Sir Isaac Newton, the learned Dr. Hales, &c. have not a little contributed to it; for if the principles which compose the stone had not been discover'd, we should never have been likely to administer to its cure. Although it is of much greater importance to the world in general, to know that a certain remedy is able to cure this or another disease, than to be inform'd of the precise manner in which it produces this effect; yet, to investigate the causes of diseases, and the

H

operation

operation of medicines in the cure of them, is a subject not only worthy of those who make the practice of physic their study, but also highly entertaining to a philosophical mind; for it is probable that a medicine whose properties and manner of operating on the human body are known, will be more judiciously and happily apply'd in the cure of diseases, than one whose unknown nature and action scarce afford any indication under what particular form or circumstances, it may be administer'd with the greatest success, and in what manner to avoid the smallest chance of mischief. It therefore having been prov'd (*a priore*) that the stone is more hard and firm in proportion to the air and acid salt it contains, it follows of course, that any medicine which dissolves, or which is the same thing that destroys. the adhesion of it must act by depriving it of some one or more of its principles. Now a medicine that enters into contact with more than one of its principles, is certainly likely to break it into pieces in much less time than that which acts only on one which is the case of soap and lime-water for the earth being more abundant in the stone, and being the most immutable of any of its constituent parts, would after the surface of the stone is saturated by the medicine, retard its further progress in separating it.

That an alkali enters into the composition of my solvent, has been allow'd, and may be prov'd by the admixture of an acid to it, or by the well known



effect with syrup of violets; it is also demonstrated by those experiments of hanging its basis in porous paper in a room, and the mixing it with vinegar, that it is absolutely an absorber of air, and has the power of destroying acids, for no chemical process whatever can separate them after: Neither can it be said that the oilous part in the stone will hinder its action on the other principles, since it's a fact that alkali will unite with it; nay more, if employ'd as a medium, will incorporate oil with water. There is no doubt but the oilous part has considerable place in resisting the power of many menstrooms, since we see it employ'd in various forms to keep and preserve many things from fermentation and putrefaction, which it does by excluding the air and water from them, as we see oil pour'd on the top of some sorts of wine, and suet on that of animal flesh: In the present case it cannot be said to interrupt or weaken the power of the solvent, since it is manifest it will unite with it, but not destroy itself in the union, as is the case when neutraliz'd with acid:

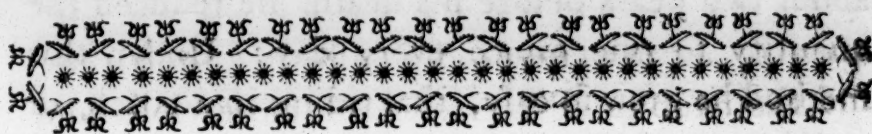
Before the principles of the stone were understood, lemon-juice, vinegar, and all kinds of acid fruits were recommended as dissolvers of it, till experience convinc'd the world of the error of the practice, as they supply'd the stone with the very properties which cement its parts together, and evinces the necessity of investigating the causes of diseases before we attempt their

cure; for by the former practice the stones were likely to accumulate prodigiously in a short time, and their substance be render'd more close and compact.

A very happy effect which the solvent has in preference to soap, lime-water, or any other intended remedy for the stone is, that by the time a small quantity is taken, it never fails to deterge the kidneys of any gravel lodg'd therein, and expell it in the form of little red stones, &c. for after that time, if its use is continued, no more is generated there, or observ'd to pass with the urine, which advantage cannot be ascrib'd to soap, lime, &c.

The ingenious and learned Dr. Whytt, who certainly had the public good at heart when he became the advocate for their use, confesses they had little power on the stones in the kidneys, but still believes them serviceable in those of the bladder: and lest I should be suspected of wresting the Doctor's opinion to my own advantage, I will add the case (being short) in which he made the declaration.

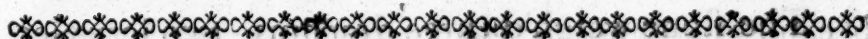
The



T H E  
C A S E  
O F

WILLIAM HAY, Esq.

\* Being, an Extract of a Letter from Dr. *Russell*, of *Brighthelmston*, to *Henry Pelham*, Esq; communicated to Dr. *Whytt*, by the late Revd. Dr. *Stephen Hales*, Clerk of the Closet to her Royal Highness the Princess of *Wales*.



November, 25th: 1755.

**M**R. Hay, took three ounces of Mrs. Stevens's Medicine in a solid form, every day for five years, never leaving off except for a few days, to observe the effect of the medicine.

About five years ago, he left off the use of these medicines, and afterwards pursued, with the same constancy, the use of castile soap and lime-water, mix'd with milk. At first he took three ounces;

\* *Author of Deformity, an Essay.*

about



about two years before his death, he reduced the quantity to one ounce every day: Under this method he grew so easy, that riding in a coach, or walking, seem'd to give him but little pain. This inclin'd him to get on horseback, which he had not done for eleven years before; but he found an inconvenience from it the first time and after the second time (which was a little before his last illness) he was heard to complain that his old distemper was like to return again. He is reported to have died apoplectic, having neglected to use the necessary evacuations.

Two days after his death, Dr. Russel was desired to attend the surgeon, on taking the stone out of the bladder; which was empty of urine, and grown callous from its rubbing on the stone.

The stone weigh'd three drachms, two scruples, and eight grains, was flat and oval, of a shining chesnut colour, perfectly polish'd and smooth to the touch in every part. Being desirous to see what the outward laminæ were compos'd of, I found one thick and friable, the other thicker, and of a brown loam colour, as also the stone to which they adher'd; and was daub'd over with very rough asperities.

From this short account of Mr. Hay's case, the Doctor observes that Mrs. Stephens's medicines, or soap and lime-water, may give relief to patients,  
and

and make them pass thro' life easier, even although they should have little or no effect in dissolving the stones; and as Mr. Hay, as well as the Bishop of Llandaff, continued to discharge red gravel in spherical pieces, he remark'd, that that gravel seem'd to be what is generated in the kidneys, where consequently the lime-water, &c. have no power; tho' he thinks they will hinder the gravel when fallen down into the bladder, from uniting or growing into a stone.

From the above declarations 'tis plain the doctor began to doubt their power in dissolving human calculi, as they certainly had the fairest trial given them in the above cases, as well as that of the Bishop and many others. The little ease which Mr. Hay receiv'd in the latter part of his days, when sitting still, does not seem to be owing to the effects of the medicines, as the Doctor confesses the stone was hard and smooth, which smoothness was certainly owing to the violent friction of it against the sides of the bladder, the latter having become callous by that means, and consequently less susceptible of pain.

For my own part, from the experiments I have made with soap, lixivums, and lime-water, I look upon them as either useless or injurious; the soap in particular, being to all intents and purposes a slow poison; it attenuates and vitiates the whole blood and juices, and causes a yellowness of the  
skin

skin and bloated countenance, and induces all the evident marks of a prevailing putrefcence: In respect to the lixiviums, in the state they have usually been administered, they have been generally omitted before such effect ensues, (as nineteen out of twenty who have taken them, have found their stomach affected by a nausea, soreness, &c.) by which means many worse evils have been prevented: Lime-water the most simple of the three, has certainly no perceptible operation on the stone in the body, tho' taken in ever so large a quantity; but as I have before observed, it is not obnoxious to the constitution, when it does not occasion a costiveness, it has the preference to common water as a drink, as being less elementary and containing less calcareous earth than the latter, in which case the stone may not accumulate so hastily or become so closely compacted.





T H E

TREATMENT *and* REGIMEN

O F

CHILDREN *in the* STONE.

**H**ITHERTO, I have said nothing respecting the regimen of children, under this excruciating malady; and, as they are liable, as well as adults to its ravages, I shall lay down a course, the most likely to succeed with them.

Children, whether from an hereditary cause, or acquir'd, are frequently attack'd with this disease in its severest state, even at the small age of two or three years and less: We have one instance of an infant that died in severe agonies at the age of seven-months; and as its complaints could not be investigated by the persons who attended it, the parents resolv'd on having it open'd by a surgeon, who, in making an incision in the bladder, found a stone as large as a filbert, with an extreme rough surface, and appear'd like a piece of sugar, when

I

a little

a little water has insinuated itself into its substance and made it porous, and then bak'd as it were, hard again. The stone was found to be as friable as a piece of sugar in that state.

In all probability, if a proper solvent medicine had been repeatedly given it, with the dose adapted to its tender age, it might have recover'd, as a stone of so loose a consistence, generally gives way to a few doses: If there had been more than one stone of the same nature in the bladder, it would without doubt have survived longer, as by the continual agitation and motion of the urine, one stone is thrown repeatedly against the other, and by that is render'd smoother, the surface of them both smoother, and often lessens their size considerably: We always observe when we cut for the stone, that where there is but one, its surface is rougher than when there are two or more.

It's impossible to account fully for such hasty growth of stones, as in this case, especially as children live so simply in respect to food.—Some have imagin'd it accumulates even in *Utero*; and 'tis certain, that a weak stomach is partly the occasion of it, for if they are from their birth feeble, they are indulg'd with extraordinary rest, by which means the aliment is not well assimilated, but remains gross, and join'd with a preternatural largeness of the secretory glands, a quantity of such matter is carried with the urine into the bladder,

der, and there by the inactivity of the child's disposition, is suffer'd to be deposited fre'er than it would if it could bear to be mov'd as children in health generally do; and that inaction and rest contribute more than all, to the growth of the stone, is as evident from its encreasing so fast in an urinal where it is not agitated to and fro.

In agile persons, who are subject for years to only slight complaints of the gravel and stone, when there is a disposition to concrete; if by accident they are attack'd with another disease, so as to confine them for a time to their bed, the fabulous matter immediately is collected, and forms itself into a stone, which if at all large, farther prevents the patient from using exercise, as pain always succeeds it, and so it has time to grow to a great bigness.

What I have said above, serves to convince how necessary it is to use gentle exercise in the gravel, or beginning of the stone, or when the disease is wholly confin'd to the kidneys, as a means of preventing a farther concretion; it may be remark'd, that after riding on horseback, the urine is strongly charg'd with a gravelly sediment, as that exercise acts upon the bladder like a diuretic medicine, by scouring and deterging it of what faburrous matter remain'd there, and if it is too much us'd, so as to make fatigue of it, the mucus that lines the internal surface of the bladder, is discharg'd



with the urine likewise; in which case the last seems preternaturally hot, as in a strangury.

In children, nothing can be more proper than a milk diet, as it prevents in a measure, violent inflammation, and may in all possibility retard the growth of the stone: Honey when it is not too opening, succeeds well, either in children or grown persons, as it's impossible for a fit of the stone to come on, without an inflammatory disposition of the body, and honey and such things are known to prevent it; mead which is made of that and water, is a very proper liquor to be drank in the stone and gravel, and being lightly diuretic, may contribute a little to the evacuation of the *faburra*.

Manna is a pretty purge for children when necessary, but glysters of that, and infusion of senna, with a little oil, succeed best, and should be given at the beginning of a fit, as they are found greatly to shorten its duration. The same medicine requir'd in the cure of adults, is equally proper in children, only the dose must be lessened proportionably to their age, and they are in general cur'd easier than men or women.

From what has been said, it cannot with reason be suppos'd a rule can be laid down for the quantity of medicine necessary to be taken in the cure of the stone; the diversity, number, size, and con-

consistence of them, render it impossible; it also happens that one medicine in different constitutions, acts more or less favourable, for what in one alters not in the least the temperature of the body, or proves lightly astringent, may in another occasion a laxness and frequency of stools, in which case a part of the medicine is carried through the intestines, without at all acting on the stone: If such an effect should succeed the taking my medicine, (tho' in a hundred I do not meet with it) I would advise a little toasted nutmeg, or half a glass of tent and brandy to be taken; or on the contrary, if a costiveness should intervene during its use, a dose of magnesia and rhubarb, taken in a little Lisbon, or white port, will aseasonally remove that: But such elaborate pains has been taken in its preparation, that ninety-nine out of a hundred, will have no occasion to use any auxiliary in that respect, which is no inconsiderate recommendation to their taking the medicine, and ensuring success from it.

Nor can there be much greater certainty in directing when to omit the medicine entirely, as it frequently happens that the curative effects of it are so sudden, as to make the patient imagine by taking perhaps only two or three large bottles, he is perfectly cur'd, which he is led to believe from the extraordinary ease he enjoys, accounted for, by the stone being of a softer texture than most, and having had a number of asperities and angular points

points in it, was the occasion of the great pain felt before. Now when the urine is fully saturated with the solvent, it acts upon it more effectually, than if of a closer union, and by its gentle stimulus moving it against the sides of the bladder (and from the attrition of the urine itself) abrades its surface, and renders it smooth and even, which never fails to contribute to the future ease of the patient, and often makes him believe its substance entirely destroy'd.

The above circumstance of perfect ease before the cure is performed, nevertheless does not often occur; in general, a pain is felt to the very last of its solution and expulsion, for if large, it is perceiv'd by its gravity, and if small, it seldom fails occasioning some pain or other, or obstructing the emission of urine.

I have not all along thought it necessary to make any material difference between the gravel and stone (except in the regimen) they being the same disease in a different degree; it's impossible to have the stone without a predisposing gravelly complaint, unless the cause is preternatural, as an extraneous body being lodged in the bladder.

At *Guadaloupe*, an officer receiv'd a small shot, in an engagement, which entered the bladder, and surviving the wound, he was afterwards seiz'd with the stone and was cut for it, when in saw-  
ing



ing it in two, the bullet was plain to be seen, and was the only nucleus that began the concretion.

In the above gentleman's unhappy case, it was impossible he could receive a radical cure from any medicine, as it could do no more than dissolve the saburra, for while the cause remain'd, he would be liable to a return of it; and indeed the lead itself was enough to occasion the greatest uneasiness, especially as its figure was chang'd from a spherical one, by its discharge from the gun.

In order to render as successful as possible the solvent in the cure of the stone, it was thought necessary to make some observations with it, when mix'd with some of the fluids commonly taken with meals, or for refreshment; as also to discover as far as possible, which vegetables promote or retard its dissolving power on the stone.

As therefore repeating the particulars of every experiment, as to the time the digestion took up, and the quantity of calculi used, would be of no advantage to the patient; it was thought proper only to point out those vegetables which are compatible with the solvent, and those which may counteract its efficacy; the different subjects were continued the whole time of the warmth of the chyle in the stomach, and rejected before any acidity could possibly take place, otherwise the experiments would not have been so accurate and satisfactory.

TABLE

## TABLE of DEGREES.

	Deg.
The solvent alone on the human calculus	
has power to — — — — —	70
When mix'd with one-third rum, or proof	
spirit, is reduc'd to — — — — —	49
With the same quantity of red port— — —	58
With as much mountain— — — — —	60
With strong ale — — — — —	56
With small beer, quite clear and fine — — —	62
Infus'd with a decoction of turnips, aspara-	
gus, colliflower and carrots seperately,	
its power was as — — — — —	65
But with raisins and apples it was weaken'd	52

There being no other fruits to be had at the time of year these experiments were made, cannot give any account of their effects on the solvent, but do suppose that cherries, goosberries, and all others of the aceffant kind, do considerably abate its power, as vinegar and all acids, reduce it greatly.

Milk and human chyle scarcely lower the power of the solvent at all, unless they have acquir'd any acidities; the same with the thinner part of the blood: But a piece of calculus of seven grains weight, being put in digestion with an admixture of two parts solvent and one part urine, was found in fourteen hours to have thrown off several scales  
and

and saburra, which being remov'd and the experiment continued twenty-eight hours, it was reduc'd to a perfect slime, or mucilage, which being suffer'd to stand at rest a day longer, let it fall to the bottom like a cloud. This experiment gave me singular satisfaction, as I had frequently observ'd in the urine of persons under a course of my solvent this same appearance at the bottom of it, (sometimes mix'd with gravel or sand,) without being able to account for it, as I never found they had felt the least heat in urine, or any uneasiness in the passage, that could induce me to suppose it the mucus of those parts abraded and wash'd off by the urine, in passing thro' them.

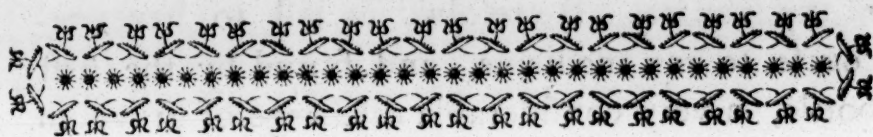
From the foregoing experiments, it's plain those persons who take the solvent, with a view of dissolving the stone should abstain from all spiritous liquors and acids, as also from much malt-liquors, and eat no fruits near the time of taking it; but for supper take milk or water-gruel: flesh meat may be eat at dinner, also fruit pyes; but vegetables may be taken of freely, except artichokes and water-crelles; old mountain wine is preferable to port or claret, as containing less tartar.

Those persons who are the least collive in habit, would do well to take a dose of rochelle salts the day before they begin the use of the solvent.

The following cases so well authenticated, it is hop'd will prove the superior efficacy of the remedy to the common medicines given in this dis-



ease, such as lime-water, soap, oyſter-shells, &c. eſpecially as it ſo well agrees with the ſtomach and conſtitution of every patient; and I aſſure the public that numbers have been cur'd by it, which my former hurry of buſineſs in ſurgery and mid-wifery, prevented me from viſiting, but in future I purpoſe making it a principal part of my profeſſion, and ſhall attend all in the moſt extraordinary caſes. I have at this time ſeveral perſons under my courſe of medicine, that labour under the confirm'd ſtone, having ſounded them; they are not yet well, but their caſes will be given in the next edition.

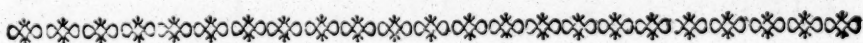


T · H · E

C            A            S            E

O F

Mr. JOHN WALKER, Merchant,  
*In Wellclose - Square.*



**F**OR a very considerable time he had been afflicted severely with the gravel, but looked upon it as a matter of no great consequence, since it would frequently intermit for weeks together; and as he had lived the former part of his life in the country, where he had made ale his principal liquor with meals, he judg'd the total disuse of it for a little time, with the prescriptions common in such complaints, would be enough to effect a cure; but found they prov'd only palliative, as they did not expel the gravel at all, and that the disease return'd with violence, sufficient to convince him a stone was accumulating, having very often suppressions in making water, with a pain after he had done, and found the stream considerably lessen'd by the obstructions occasion'd thro' the stricture of the passage, from the irritation

of the faburra. He resolv'd at last to have recourse to my medicine, and found by the first bottle, a very considerable discharge of gravel in large grains, and of such a nature and quantity, as was astonishing: He continued in its course 'till the total discharge of it, which happen'd by the time he had taken four bottles; and from the first of his beginning the use of it, felt not the least pain; and as it is now eighteen-months since, affirms he is radically and effectually cur'd.



## The C A S E of Mr. R. PRITCHARD,

At No 434, Oxford - street,

**H**E had been troubled for fourteen months with the gravel in the kidneys, and sometimes to that degree, that he was unable to walk but with great pain, and had repeated stoppages in making water; and twice was oblig'd to have it drawn off with a catheter: After voiding two or three small pieces, he was easier a few days, and then the same complaints would return again. Alarm'd with these circumstances, he had recourse to the solvent, and found that in taking two bottles, he discharg'd more small stones and sand, than he had done in the whole year before, and with the third bottle, the discharge was small sand  
of



of various colours, and in a few days ceas'd, together with the pain entirely; but however, to satisfy himself, he took another bottle and with no other effect, he therefore rested, assur'd of the whole being expell'd, and tho' it is now eight months ago, he has not had the least symptom of the gravel or stone, and is as well as in any part of his life.

The foregoing cases, particularly the last, prove beyond a doubt the power of the solvent, in expelling the gravel from the kidneys, not only by its dissolving quality, but also by its detergent or stimulating one, as the first discharge was so soon brought on by it, and so materially different from the latter, it being in perfect round pieces, or rather congeries of little globes, whereas the latter consisted of sandy earth of a darker colour and more irregular form, suppos'd to be that which is more immediately attach'd to the sides of the kidneys themselves. That it imparts a stimulus to those vessels in particular, is accounted for two ways, first, by the irritability of them, and secondly, by the superior strength of the medicine, when first brought into contact with the ammoniacal salt of the urine, and that it possesses more of the dissolving quality in the bladder, is reasonably conjectur'd, from the continued supply it has of that fluid in small quantities from the kidneys; the bladder consequently will not be so sensibly affected by the volatility rais'd by such union, but retain the water long enough to impress the surface of the stone.

THE

The C A S E of

Mr. F R E E T H, at *Nottingham*,

*In the Words of his Letter, which is in the Hands  
of the Proprietor.*

To Mr. A D A M S, &c.

*S I R,*

I Had till lately, been subject for five years, to a complaint in my bladder and kidnies, which I have no doubt was the stone, as will appear by my account; the first of its rise was during my stay in *Wales*, and having drank more freely of malt-liquor than any other, I resolv'd to leave it off, and remov'd to *London* accordingly, in hopes the change of air might relieve me: I apply'd to my physician near *Piccadilly*, for his advice how to proceed in such a state, who recommended me to live abstemious, and bleed twice at the distance of a month; for as at that time the complaint was chiefly in the region of the loins, he look'd upon it as an inflammatory spasm of the kidnies, as I was well sometimes for a few days, and then it would return with great violence; and all this time nothing remarkable was voided with my urine: My appetite failing, I began to think it a complaint of

of greater consequence than the doctor guess'd it, and communicated my fears to him, who wrote for me, which afforded me a little relief for the present; nothing I took gave any other than temporary ease, as I continued ill till the *July* following, when riding to *Newmarket* rather hastily, was attack'd with a total suppression of urine, attended with the most excruciating torture, not being able to move a step.

In this state, I call'd in Mr. *Sandover*, apothecary of the place, and before he left me, found something transplant the pain as it were, from my back and loins, to the bladder and lower part of my belly; he desir'd me carefully to observe the condition of my urine, as he said he was certain a stone had pass'd from the kidneys thro' the passages into the bladder, by the sudden flow of water which ensued with the translation of the pain: I observ'd his direction in that, and could see nothing more in it than a little whitish sediment, with something of the consistence of slime.

I took nothing of consequence for four months after, as I was tolerably easy that time, but began to find after making water, I had frequently a pain at the end of my yard, with a little at the entrance of my bladder; I continued in that way better and worse for a considerable time, till lately it became violent, and oblig'd me often after I had done urining, to press with force against any thing that mov'd the position of the bladder, from  
which



which I was assur'd it was the stone. And last September, I apply'd myself to your medicine, when after taking two small and one large bottle, I found a considerable discharge of gravel in my water, which continued with some remission during the use of seven bottles, since which time, I have not had the least return of pain, being nine weeks, and should be glad to know if I may safely lay it aside wholly. My stomach is yet but weak, tho' considerably better than it was, and one uncommon circumstance attending my medical regimen, was,, I could have eat heartier than before.

I am,

SIR, Yours, &c.

I shall make a remark or two in the above case, the first in respect to the sudden remission of pain after the feverish heat Mr. *Freeth* complain'd of. It has frequently happen'd that people have suffer'd of the stone in the kidnies for a considerable time, without any appearance of its removing; when after any laborious exercise or other cause, an inflammation has ensued, which has for that time been a temporary cure, by the pain inducing convulsive twitches in the part, so often repeated, that at length the stones are expell'd from thence, into the bladder, whence, if they are small, they sometimes are evacuated by the urine, or being retain'd concrete into a larger stone.

I return'd him for answer, that I could not perceive the least necessity of his taking the medicine

cine longer, but advis'd him, as his stomach was weak, to fortify it with bitters, and take a few doses of the Vinum Antimonii now and then in red wine and water.

In the above case, the efficacy of the solvent is describ'd in the discharge of gravel, &c. during his taking it; also by the cessation of pain there's no doubt but that the stone was totally dissolv'd and expell'd with the urine, as it's impossible if it had been retain'd, that he could have continued long in that easy state.



*The following Case being so singularly favourable to the Character of the Solvent, as also to convince the World of its real power in dissolving the stone, 'twas thought necessary to attest the Cure before the Right Honourable the Lord-Mayor; the Quantity taken being so small, many Persons unacquainted with its effect, might deem it an improbable Event: Indeed for my own part, I never had an Instance beside. of a Stone of that Size, being expell'd in so short a time.*

**M**R. William Jones, of *Bristol*, out of gratitude to the proprietor, and for the good of the public, came this day before the right honourable the lord-mayor, and made oath, that he had been severely afflicted with the confirm'd stone in the kidneys first, and then in the bladder, and that it became so violent, as determin'd him to come to *London* to be cut for it, in *St. Thomas's Hospital*, having been previously examin'd and founded for that purpose.

A few days before the intended operation, he was advis'd by one of the surgeons, to make tryal of *Adams's* solvent; and he attests, that in taking even the first bottle, he was sensibly reliev'd from pain, and from thence continued to discharge gravel



vel and small stones till the cure was compleated, which was in less than three months, and that he has not had the least complaint since.

*Sworn at the Mansion-House,*

*October, 17th. 1772.*

W. N A S H, Mayor,

Witness *John Nelson*, and *S. Perry*, Surgeon,  
*Aldersgate - Street.*



SO great has been the success I have met with, the short time I have made the discovery, that I never administered it to one person without advantage, if the stone was not accompany'd with any other disease, that render'd it difficult to be taken; yet candour obliges me to mention two cases where my expectations were defeated: The first was in that of the late John Vincent, Esq; of *Beech-Hill, Surry*, who was recommended by a physician of *Guildford*, to the solvent.

He had had a large ulcer in the bladder for the five last years of his life, attended with a considerable discharge of matter therefrom, which ulcer was occasion'd by the roughness of the stone, it being also very large. Now as we find the urine  
volatilis'd

volatilis'd by the solvent, those persons under such a complicated disease find their pain encreas'd, (contrary to the general effect of giving ease, which it never fails to do, if the Passages are not ulcerated) which pain discourag'd Mr. *Vincent* to continue it, tho' it evacuated all the small pieces from the kidneys, &c. and I left him with the resolution of being cut, but I hear since he died about three months ago.

The second was the case of Mr. *White*, No 36, Walbrook, who took two bottles of the solvent, and tho' he had a beginning discharge of the coat of the Stone, yet he thought the cure would be tedious, and therefore was cut in Guy's Hospital, and died the Wednesday following.

We therefore see that an ulcer is an obstacle also to the success of the operation, which consideration led me to reflect on some means of relieving the pain in the above case, for which I have prepar'd an injection that will, I expect, not only render the operation of the solvent easy, but also dispose the ulcer to heal faster than it would by only the gradual wasting of the stone, which was the first cause, and still supports it.



# The C A S E of

Mr. W. H A R P U R,

At the Right Honourable *Lord Robert Bertie's*.

**H**E had been afflicted with the stone many years, to that degree as render'd him incapable of using exercise, or even any motion without great pain, and had taken almost every medicine without relief; but being advis'd to the solvent, he in a little time after taking it, found the most happy effect from it; for beside the ease he now enjoy'd, enabling him to ride or walk without bloody-water, or any inconvenience; he discharg'd such pieces of the stone, as convinc'd him the solvent had the most amazing power on human calculi, for they were a perfect coat or rough stratum of the stone, from which evacuation he dated his ease: He had also a foretime been prompted to make water perhaps forty or fifty times in a day, with excruciating torture; he could now retain it seven or eight hours, even tho' he walk'd or rode, and after he had done, felt scarce any uneasiness. In this way he continued discharging gravel and concave pieces of stone, like broken nut-shells every two or three weeks till cur'd, and the last time I saw him, he had rode on horseback sixty miles that day, with as much ease, as if he  
never



never had had the stone, and will with great pleasure satisfy any person of it, as also of the salutary quality of the medicines on the stomach.

It is not thought necessary to re-insert the cases of the former editions, but any person desiring it, shall be refer'd to them, and many more who are now taking the solvent with the same effect.

The following gentlemen having in different degrees, experienc'd the most happy effects from the solvent, will readily acquaint any person of the operation of it, superior to any thing hitherto given in such diseases, some of them having taken other Medicines for years without benefit, also that it is divested of the least corrosive or acrid quality that would injure the stomach or any viscera.

Mr. *Batchelor*, of Bathwick, near Bath; Mr. *Yates*, of Stoke Newington; *J. Harkness*, Esq. at Islington, or Ely; *J. Woodrow*, Esq. Sen. Norwich; *J. Mason*, Esq. of the Navy-office; Mr. *Houldston*, of Shrewsbury; Mr. *Morgan*, Grocer, Cardiff; Mr. *Shribb*, at Kelsal, Suffolk; — *Stephenson*, Esq; Surgeon, Egham, Surry; Mr. *Easton*, Salisbury; besides which, the proprietor has an hundred or more letters receiv'd from Persons of the faculty, and others, in the country, with the most flattering account of it's success.

It is hop'd the stone will no longer be considered out of the limits of medicine, as the foregoing cases sufficiently testify; a number  
of

of the most remarkable that occur, will hereafter be given to the purchasers of these, by way of supplement.

The only plausible reason alledg'd by most, for affirming the stone incurable, was, that it being of a nature so far harder than the bladder, or kidneys which contain it, 'twas thought impossible for any menstruum to act sufficiently upon it, without injuring the stomach, and other Viscera, or the containing parts.

To give a number of chymical and philosophical experiments, to illustrate the absurdity of the above assertion, would exceed the bounds of this book; but to those who are at all conversant with the laws of menstrooms it is needless: It is no wonder that the urine is incapable of wasting it, when we know it is already saturated with an animal salt, and is therefore prevented from penetrating and dividing its parts.

There is a kind of sympathy, or aptitude of pores in all bodies, whether fluids or substances, which fits them for entering minutely into each other. Spirits of wine will dissolve rezins, yet it will not effect gums; water will compleatly dissolve the latter, and will take no hold on rezins without a medium, such as yolk of egg and others. According to several experiments of water ting'd, it has not been found sensibly to enter into the pores of marble, tho' melted wax instantly does; with a variety of others.

Metals,

Metals, &c. have been known to waste or dissolve in the stomach, and *Ductus Pylorus*, without producing any ill effect to the constitution. A small brass knife handle was swallowed by accident, and after several years by the action of acids upon it, taken as food, was greatly wasted.—Then why not the stone in the bladder dissolvable, when we have a hundred circumstances to favour the operation, and above all, have undeniable proofs of a large stone being totally dissolved or broken to pieces, and evacuated in so short a time as six weeks, and by a medicine that operates in the most gentle and salutary manner.

The proprietor begs to assure those persons who are afflicted with the stone to an uncommon degree, that he has invented an instrument for injecting with the greatest facility, the solvent, (properly diluted) immediately into the bladder, by which additional discovery, he flatters himself that let the stone be ever so rough and hard, he can dissolve its outward stratum almost immediately, and therefore can afford them ease in much less time than can be expected without it, and further hopes that no one in such circumstances, will out of prejudice or fear, be deterr'd from applying for such relief, because the practice is new.

F I N I S.



The Solvent may be had Wholesale and Retail,  
at the Chymical Laboratory, where it is prepar'd,  
the Golden-Head, opposite *Somerset-House, Strand*,  
where Letters are desir'd to be directed: The fol-  
lowing Persons also are authorized to vend it;  
viz. Mr. Shatwell, opposite the *Adelphi, Strand*;  
Mr. Southern, Bookseller, in *St. James's-street*;  
and in the Country by the following News-paper  
Printers and others, Crouse, *Norwich*; Meissis,  
Jobson, *Coventry*; Cranston, *Alton, Hampshire*;  
Aris, *Birmingham*; Pine, *Bristol*; Crutwell, *Bath*;  
Harrop, *Manchester*; Goadby, *Sherborn*; Lee,  
*Lewes*; Smith, *Canterbury*; Raikes, *Gloucester*; Jack-  
son, *Oxford*; Pugh, *Hereford*; Crutwell, *Woking-*  
*ham*; Monk, *Chester*; Trewman, *Exeter*; Wright,  
*Leeds*; Fletcher and Co. *Cambridge*; Berrow,  
*Worcester*; Telfynnan, *York*; Frost and Co.,  
*Chelmsford*; Linden, *Southampton*; Hodson, *Salis-*  
*bury*; Wood, *Shrewsbury*; Austin, *Hertford*; Slack,  
*Newcastle*; Carnan, *Reading*; Whitworth, *Harwich*;  
Whittingham, *Iym*; Rogers, *Calne*; Atkinson,  
*Southminster*; Shave, *Ipswich*; Hooker, *Colchester*;  
Smith, *Marlbro*; Williamson, *Liverpool*; Drewry,  
*Derby*; Creswell, *Nettlingham*; Leverett, *Walden, &c.*



